

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

1. CONTRACT ID CODE

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1 17

2. AMENDMENT/MODIFICATION NO.

002

3. EFFECTIVE DATE

02/25/2013

4. REQUISITION/PURCHASE REQ. NO.

See Schedule

5. PROJECT NO. (If applicable)

6. ISSUED BY

CODE

HPOD

7. ADMINISTERED BY (If other than Item 6)

CODE

HPOD

US Environmental Protection Agency
Headquarters Procurement Operations
Ariel Rios Building
1200 Pennsylvania Avenue, NW
Washington DC 20460

8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code)

(x)

9A. AMENDMENT OF SOLICITATION NO.

9B. DATED (SEE ITEM 11)

x

10A. MODIFICATION OF CONTRACT/ORDER NO.

EP-W-11-054

0001

10B. DATED (SEE ITEM 13)

03/08/2012

CODE (b)(4)

FACILITY CODE

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

☐ The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers ☐ is extended, ☐ is not extended.
Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods: (a) By completing Items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (If required)

Net Increase:

\$223,522.00

See Schedule

13. THIS ITEM ONLY APPLIES TO MODIFICATION OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

CHECK ONE

A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.

B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).

X

C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:

FAR 52.243-3: Changes - Time and Material or Labor Hour

D. OTHER (Specify type of modification and authority)

E. IMPORTANT: Contractor ☐ is not. ☒ is required to sign this document and return 1 copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)

DUNS Number: (b)(4)

The purpose of this modification is to incorporate the changes under tasks 4, 5, and 6 specified in the revised Statement of Work attached hereto. As an equitable adjustment for the subject changes, the task order ceiling price is increased by \$223,522.00, from \$310,173.50 to \$533,695.50 with an increase in level of effort of 1,910 direct labor hours. The subject task order is fully funded in the amount of \$533,695.50 thru its completion date of 30 September 2013. By signing, the contractor hereby releases the Government from any and all liability for further equitable adjustment attributable to the work specified under this task order.

COR: Sean Hogan

Alt COR: Lisa Grogan-McCulloch

Continued ...

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER (Type or print)

16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)

Faye Sas

15B. CONTRACTOR/OFFEROR

15C. DATE SIGNED

16B. UNITED STATES OF AMERICA

16C. DATE SIGNED

(Signature of person authorized to sign)

(Signature of Contracting officer)

02/25/2013

NSN 7540-01-152-8070

Previous edition unusable

STANDARD FORM 30 (REV. 10-83)
Prescribed by GSA
FAR (48 CFR) 53.243

CONTINUATION SHEET

REFERENCE NO. OF DOCUMENT BEING CONTINUED
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R T I International

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	<p>TOPO: SEAN HOGAN</p> <p>LIST OF CHANGES:</p> <p>Reason for Modification : Supplemental Agreement for work within scope</p> <p>Period Of Performance End Date changed from 2013-03-11 00:00:00 to 2013-09-30 00:00:00</p> <p>Total Amount for this Modification: \$223,522.00</p> <p>New Total Amount for this Version: \$533,695.50</p> <p>New Total Amount for this Award: \$533,695.50</p> <p>Obligated Amount for this Modification: \$223,522.00</p> <p>New Total Obligated Amount for this Award: \$533,695.50</p> <p>Ratification changed to : N</p> <p>CHANGES FOR LINE ITEM NUMBER: 1</p> <p>Total Amount changed from \$310,173.50 to \$533,695.50</p> <p>Obligated Amount for this modification: \$223,522.00</p> <p>End Date changed from 2013-03-11 00:00:00 to 2013-09-30 00:00:00</p> <p>CHANGES FOR DELIVERY LOCATION: OAR/OAP/CCD</p> <p>Amount changed from \$310,173.50 to \$533,695.50</p> <p>NEW ACCOUNTING CODE ADDED:</p> <p>Account code:</p> <p>12-13-B-58F7-101A46XQ3-2505---1358FC3563-002</p> <p>Beginning Fiscal Year 12</p> <p>Ending Fiscal Year 13</p> <p>Fund (Appropriation) B</p> <p>Budget Organization 58F7</p> <p>Program (PRC) 101A46XQ3</p> <p>Budget (BOC) 2505</p> <p>Job # (Site/Project)</p> <p>Cost Organization</p> <p>DCN-LineID 1358FC3563-002</p> <p>Quantity: 0</p> <p>Amount: \$19,407.98</p> <p>Percent: 6.25714</p> <p>Subject To Funding: N</p> <p>Payment Address:</p> <p>RTP Finance Center</p> <p>US Environmental Protection Agency</p> <p>RTP-Finance Center (D143-02)</p> <p>109 TW Alexander Drive</p> <p>Durham NC 27711</p> <p>NEW ACCOUNTING CODE ADDED:</p> <p>Continued ...</p>				

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ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	<p>Account code: 12-13-B-58F7-101A46XQ3-2505---1258FC2676-001 Beginning Fiscal Year 12 Ending Fiscal Year 13 Fund (Appropriation) B Budget Organization 58F7 Program (PRC) 101A46XQ3 Budget (BOC) 2505 Job # (Site/Project) Cost Organization DCN-LineID 1258FC2676-001 Quantity: 0 Amount: \$80,222.00 Percent: 25.86359 Subject To Funding: N Payment Address: RTP Finance Center US Environmental Protection Agency RTP-Finance Center (D143-02) 109 TW Alexander Drive Durham NC 27711</p> <p>NEW ACCOUNTING CODE ADDED: Account code: 13-14-B-58F7-101A46XQ3-2505---1358FC3563-001 Beginning Fiscal Year 13 Ending Fiscal Year 14 Fund (Appropriation) B Budget Organization 58F7 Program (PRC) 101A46XQ3 Budget (BOC) 2505 Job # (Site/Project) Cost Organization DCN-LineID 1358FC3563-001 Quantity: 0 Amount: \$123,892.02 Percent: 39.94281 Subject To Funding: N Payment Address: RTP Finance Center US Environmental Protection Agency RTP-Finance Center (D143-02) 109 TW Alexander Drive Durham NC 27711</p> <p>Delivery Location Code: OAR/OAP/CCD OAR/OAP/CCD US Environmental Protection Agency Continued ...</p>				

CONTINUATION SHEET

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NAME OF OFFEROR OR CONTRACTOR

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ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	1200 Pennsylvania Avenue NW Mail Code: 62107J OAP/CCD Washington DC 20460 USA Period of Performance: 03/12/2012 to 09/30/2013				

STATEMENT OF WORK

Title: Support for Development of Verification Process for Greenhouse Gas Reporting Program

Task Order Project Officer (TOPO):

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I. BACKGROUND

In September 2009, EPA finalized the regulatory action that launched the EPA's Greenhouse Gas Reporting Program (GHGRP). Covered facilities will report 2011 GHG data to EPA on either March 31, 2012 or September 28, 2012, by using a web platform developed by EPA called the electronic GHG Reporting Tool ("e-GGRT") or by submitting a bulk XML file. The GHGRP is an annual reporting program, with report submissions due in subsequent years on March 31 of each year.

GHG data reported under the GHGRP will be verified by EPA. Prior to EPA verification, reporters are required to self-certify that the data they submit to EPA is truthful, accurate and complete. EPA reviews the GHG data, including emissions data from direct emitters and supporting data submitted from reporters, and verifies that they are complete, accurate, and meet the reporting requirements of this rule. EPA data verification ensures accuracy and completeness, such that EPA and the public are confident in using the data for developing climate policies and potential future regulations. Data that are not entitled to confidential

treatment will be published on EPA's website for public analysis.

In implementing verification of GHGRP data, EPA has developed a three step process, described below.

1. **Automated Review of Data.** First, EPA conducts an initial centralized review of the data which is largely automated. The automated review consists of two components. The first component is built in e-GGRT and is designed to provide reporters with real-time feedback before they officially submit their data. The second component is built in stand-alone software, referred to as the Verification Tool (VT), which pulls post-submittal data from e-GGRT and run pre-programmed tests to more closely assess the completeness and accuracy of the data. Both e-GGRT and VT generate output reports to summarize the verification findings and to flag possible errors and inaccuracies for follow-up.
2. **Staff Review of Data.** Second, subpart leads review the output reports, following program-wide instructions on verification priorities and procedures, and notify reporters of any potential errors, discrepancies, or questions. The purpose of this step is for reporters to resubmit their annual reports with corrected data or for the subpart leads to otherwise resolve the flags through analysis and communication with the reporters.
3. **On-Site Visits.** Third, EPA will maintain the option to conduct on-site visits of selected facilities and suppliers, in the event centralized verification identifies issues which warrant site visits to resolve. The purpose of site visits would be to further evaluate reported data based on records that are kept at the facility but not submitted (e.g., GHG monitoring plans), as well as field methods to measure and QA/QC data. To date, EPA has not encountered a situation where an on-site visit is required and it is considered to be unlikely in the future.

To date, EPA has developed and implemented this verification process, with exception for the on-site visits. The scope of this effort has included developing and coding the specifications for all of the checks that the VT used for 28 subparts, including range checks, algorithm logic checks, statistical tests, and substitute data checks. This also included developing the Oracle tables that were used to transfer GHG data and VT output reports between e-GGRT and the VT. Furthermore, this included developing the format and organization of the program-wide verification instructions and extensively researching the availability of outside data sources which could be used to evaluate data quality. In September 2011, the GHGRP received data for Reporting Year 2010 (RY2010), which was the first year that data was collected and successfully verified by the Program.

As further described in this SOW, future work will entail making updates to the VT and verification process before the GHGRP receives the next round of data in March and September 2012, running the VT and performing other verification procedures in 2012 and future years, and making ongoing improvements to the VT and verification process. With respect to ongoing

improvements, EPA is continually striving to more effectively integrate the GHGRP data collection system (e-GGRT) and the verification process. Therefore, while this SOW presents an approach for performing verification, EPA remains open to consider other tools and/or processes that meet the same objectives and schedule.

II. SCOPE

The work outlined under this requirement is consistent with Section 1.2.5 of the Contract Statement of Work.

III. TASKS AND DELIVERABLES

Task 1: Project Management

The Contractor shall provide project management under this task, and shall submit a Monthly Status Report to EPA's TOPO and Contracting Officer (CO) in accordance with the Project Reporting section below. During the Period of Performance (POP), the Contractor shall immediately inform the TOPO and CO by telephone and/or email of any problems that may impede performance along with any corrective action needed by the EPA or the Contractor to solve the problem.

Under this task, the Contractor shall also attend a kick-off meeting, either via conference call or in person, whichever is most cost-effective to the U.S. Government, to discuss the goals and strategy for completing the deliverables. This kick-off meeting will serve as a brainstorming session to clarify the tasks, provide any necessary background material, solicit ideas and feedback from the Contractor, as well as formulate ideas for work to be completed by the Contractor under the Tasks listed below. The contractor shall develop a project timeline based on the statement of work and direction from the TOPO that incorporates the deliverable dates for all tasks. The Contractor, under this task, shall also attend a wrap-up meeting at the end of the POP to discuss work completed under the Tasks.

Deliverables and schedule under Task 1:

Task 1.1	Attend kick-off meeting	Within 1 week of approval of Task Order
Task 1.2	Project Timeline	Within 2 weeks of approval of Task Order
Task 1.3	Monthly Status Report	By 10 th business day each month
Task 1.4	Attend End of POP meeting	At least 2 weeks prior to end of POP, per TOPO direction

Task 2: Critical Review of Existing Verification Process

EPA successfully verified the first round of data collected through the GHGRP and, in the process, gained a lot of valuable experience which will need to be captured and used to further develop and refine the verification process. To this end, the purpose of this task is for the contractor to develop a thorough understanding of the existing verification process and the lessons learned during the first round of verification so that opportunities for improvement are

identified and addressed, where feasible.

To this end, the contractor shall perform a critical review of the existing GHGRP verification process. The objectives of this review are for the contractor to:

- establish a thorough understanding of the existing verification process and the systems used for verification, correspondence, tracking and reporting;
- identify opportunities to improve the existing process and develop recommendations for both near-term and long-term improvements; and
- develop a strategy to implement improvements while meeting the objectives and schedule described in this SOW.

The outcome of this effort will be a list of recommendations to improve the existing verification process and a proposal for implementing these recommendations. In the event EPA supports one or more of the recommendations, the recommendations will be implemented according to a process and schedule agreed upon by the TOPO.

Deliverables and schedule under Task 2:

Task 2.1	Meet with EPA verification team	Within 2 weeks of approval of Task Order
Task 2.2	Summary of recommendations and proposals to improve the existing verification process and/or systems	Within 4 weeks of approval of Task Order

Task 3: Finalize, Test, Deploy, and Operate the Verification Tool (VT)

The VT will need to be updated, tested, deployed and operated in two phases in 2012. Before reporting on March 30, 2012 ("Track 1"), the contractor shall update the VT to reflect any revisions or additions to existing verification plans which were made since reporting and verification of data in 2011. Before reporting on September 28, 2012 ("Track 2"), the contractor shall perform the development and testing required for deploying and operating the VT with 12 additional subparts, along with any additional enhancements.

The VT was designed according to verification plans that were developed for each subpart. Each verification plan specifies checks that are used to assess the quality of the individual data elements reported under a particular subpart. The type of checks includes reasonable range checks, algorithm checks, statistical analyses checks, and completeness checks. Since using the VT to verify RY2010 data, the verification plans have been revised (e.g., modified existing checks and added new checks). The contractor shall update, test and deploy the VT software to incorporate any such changes to the verification plans before EPA receives data on March 30, 2012.

EPA added 12 source categories to the GHGRP which will report data for the first time on September 28, 2012. These source categories are:

- Electronics Manufacturing (Subpart I)
- Fluorinated Gas Production (Subpart L)
- Magnesium Production (Subpart T)
- Petroleum and Natural Gas Systems (Subpart W)
- Use of Electric Transmission and Distribution Equipment (Subpart DD)
- Underground Coal Mines (Subpart FF)
- Industrial Wastewater Treatment (Subpart II)
- Imports and Exports of Equipment Pre-charged with Fluorinated GHGs or Containing Fluorinated GHGs in Closed-cell Foams (Subpart QQ)
- Carbon Dioxide Injection and Geologic Sequestration (Subpart RR)
- Manufacture of Electric Transmission and Distribution (subpart SS)
- Industrial Waste Landfills (Subpart TT) and;
- Injection of Carbon Dioxide (Subpart UU)

The contractor shall assist with developing verification plans for these source categories and, based on these verification plans, the contractor shall update, test and deploy the VT software to incorporate these source categories before EPA receives data on September 28, 2012.

In addition to these updates to the VT, the contractor shall continue to update the VT as the e-GGRT schema and reporting spreadsheets are developed and refined. The contractor shall incorporate new checks and modify existing checks as they are developed throughout the verification process. As directed by the TOPO, the contractor shall continue to update the VT to incorporate system improvements that are developed during and/or after verification of RY2011 data. During final development of the VT, the contractor shall present the TOPO with periodic web-ex demonstrations so that the TOPO can see its progress.

In order to begin testing of the VT integration with e-GGRT, the contractor shall gain access from its server to the NCC server at which e-GGRT and the Oracle tables are housed. The contractor shall test the functionality to populate the Oracle table with XML files as they are generated and to transfer them from the Oracle table to the VT. The contractor shall also test the functionality to populate the Oracle table with the VT output reports as they are generated.

The VT is presently set up on a computer in EPA's CBI room located at 1310 L Street, NW,

Washington, DC, and EPA intends to continue hosting the VT on this computer through 2012. The contractor shall install, test and perform all necessary trouble shooting of the updated versions of VT on this computer before the specified reporting deadlines. This includes conducting user acceptance testing and load testing of the VT, developing a working beta version of VT, and finally developing a working production version of VT. In addition, the contractor shall develop instructions and provide training, as needed, on using updated versions of the VT, as well as providing the support needed to use the VT throughout the verification process.

Once EPA receives GHG data, the contractor shall operate the VT in the EPA CBI room and/or provide EPA with support, as needed, to operate the VT. The contractor shall monitor the performance of the VT and conduct any necessary trouble shooting and software updates to ensure its successful operation. The contractor shall generate output reports at a frequency to be determined (e.g., at least weekly).

Deliverables and Schedule under Task 3:

Task 3.1	90% completion of VT coding for all checks identified for 3/30/12 reporting	March 9, 2012
	90% completion of VT coding for all new and updated checks identified for 9/28/12 reporting	August 3, 2012
Task 3.2	100% completion of VT coding for all checks identified for 3/30/12 reporting	March 19, 2012
	100% completion of VT coding for all checks identified for 9/28/12 reporting	August 27, 2012
Task 3.3	Demonstration of VT for 3/30/12 reporting	Week of April 2, 2012
	Demonstration of VT for 9/28/12 reporting	Week of September 17, 2012
Task 3.4	User acceptance testing for EPA and load testing of VT for 3/30/12 reporting	March 19 – 23, 2012
	User acceptance testing for EPA and load testing of VT for 9/28/12 reporting	August 27 – 31, 2012
Task 3.5	Beta version of VT for 3/30/12 reporting is working	March 30, 2012
	Beta version of VT for 9/28/12 reporting is working	September 7, 2012
Task 3.6	Production version of VT for 3/30/12 reporting is installed and working	April 6, 2012

Production version of VT for 9/28/12
reporting is installed and working

September 21, 2012

Task 3.7

Operate VT for 3/30/12 reporting

April 6 – August 2012

Task 4: Develop Statistical Tests for Each Subpart

The contractor shall develop subpart-specific statistical checks for verification purposes. To date, statistical checks have not had a significant role in the GHGRP verification process given limitations on the data the Program collects, and there is only one year of data. However, looking ahead, EPA continues to be interested in developing statistical tests to evaluate GHGRP data.

The contractor shall determine what types of statistical analysis could be used to evaluate data collected by the GHGRP for the purpose of data verification. The contractor shall determine both the metrics to be used for verification from a technical standpoint as well as the specific statistical test that should be applied. For example, for many subparts it makes sense from a technical perspective to compare production data, where available, to emissions ratio of all facilities within a subpart, and then identify outliers as potential reporting errors. In this example, the contractor would identify the specific data reporting elements that would be used for the ratio as well as the statistical test that would be employed. EPA expects approximately 5-20 verification checks to be conducted on each subpart (perhaps more for subpart C), depending on the complexity and number of reporters for each subpart. Below are some additional examples:

- Comparing site specific emission factors across facilities within a subpart to identify outliers; and
- If a subpart consists of facilities both with and without CEMS, comparing emissions from facilities without CEMS to emissions from facilities with CEMS.
- Comparing year-to-year emissions and other factors.

EPA expects that the contractor may recommend that some tests be run in parallel while others are run in series. For example, a test which yields outliers in emissions reported may be followed up by a test checking the inputs to the emission equation to isolate which variable caused the emissions to be an outlier.

In completing this task, the contractor shall investigate whether any statistical methods exist that could be applicable beyond the identification of outliers. The contractor shall also consider the use of data in other subparts to verify data in a given subpart. For example, perhaps data reported under subparts MM or P could be used for the purpose of verifying data reported under subpart Y. Lastly, the contractor shall consider whether data from other EPA (or non-EPA) reporting

programs can be used to verify GGRP data.

The contractor shall prepare a strategy to develop and employee statistical checks in the GHGRP verification process. This strategy will present an approach and schedule to develop and implement statistical checks to verify data reported on March 30, 2012 and checks to verify data reported on September 28, 2012. This strategy will outline steps to develop statistical checks, incorporate statistical checks in the VT, and explain how verification issues identified by statistical checks will be used to evaluate data quality. The contractor shall also assess the relative strength of the statistical tests to help determine which statistical checks would be the most valuable for verification. The contractor shall implement the strategy approved by the TOPO.

The contractor shall use data reported to the GHGRP in 2010 and 2011 to derive correlations between different reporting elements and the respective mass of GHG emissions. To date, the contractor has successfully applied this approach to data collected under Subpart C (Stationary Combustion). As a next step, EPA is requesting that the contractor develop statistical checks for other subparts leveraging the Subpart C tabular data that was developed in the initial phase of this TO. The contractor shall use the Subpart C data to define similar sets of data within other subparts and use existing statistical tools to evaluate correlations between stationary combustion attributes and process emissions reported at the subpart level in other subparts. The purpose of this effort will be to develop a subpart level "grade" for subparts with stationary combustion operations. In addition, the contractor shall use the business intelligence software EPA combined with e-GGRT (i.e., "Spago") to extract tabular views of data for other subparts and follow the same approach used for Subpart C to develop statistical routines for determining the overall quality of these data sets, as well as a means for identifying the sources within these data sets that deviate from sector norms.

Deliverables and Schedule under Task 4.

Task 4.1	Draft strategy to develop and implement statistical checks	8 weeks after approval of task order
	Final strategy to develop and implement statistical checks	2 weeks after receiving EPA comments on draft strategy.

Task 5: Develop Algorithm Checks

The contractor shall develop algorithm checks to verify GHGRP data and/or refine existing algorithm checks. Similar to statistical analysis checks, the GHGRP has employed algorithm checks to a small extent to verify data. To date, these checks have been developed by the respective EPA subject matter expert (SME) and their contractor to be incorporated in the VT. The purpose of this task is for the contractor to evaluate the algorithm checks used to date and develop a strategy to strengthen existing checks and/or create new checks which would be incorporated into the VT for future verification. The outcome of this effort would be feedback

and guidance to the SMEs to assist them with developing and refining algorithm checks and/or development of algorithm checks for multiple subparts.

To this end, the contractor shall prepare a strategy and schedule to evaluate existing algorithm checks, as well as develop and/or refine and implement new or existing algorithm checks into VT. This strategy will present an approach and schedule to develop and implement algorithm checks to verify data reported on March 30, 2012 and checks to verify data reported on September 28, 2012. The contractor shall implement the strategy approved by the TOPO.

EPA is requesting that the contractor develop algorithm checks for other subparts leveraging the Subpart C tabular data that was developed in the initial phase of this TO. This approach includes the same steps outlined above under Task 4. In addition, the contractor shall use the business intelligence software EPA combined with e-GGRT (i.e., "Spago") to extract tabular views of data for other subparts and follow the same approach used for Subpart C to develop routines for determining the overall quality of these data sets, as well as a means for identifying the sources within these data sets that deviate from sector norms.

Deliverables and Schedule under Task 5.

Task 5.1	Draft strategy to develop and implement algorithm checks	8 weeks after approval of task order
	Final strategy to develop and implement algorithm checks	2 weeks after receiving EPA comments on draft strategy

Task 6: Identify Other Data Sets to Evaluate GHGRP Data

The contractor shall identify existing data sets (e.g., EIA, NEI, State inventories, etc.) that can be used to evaluate the data received for the 12 subparts listed under Task 3. In addition, the contractor shall develop a strategy to use outside data sets to verify GHGRP data. To date, EPA has identified an extensive list of data sets that are similar to GHGRP data and, therefore, might be useful to evaluate data quality. The purpose of this task is for the contractor to identify data sets that could be used to evaluate data collected under the new subparts, as well as to develop a strategy to effectively use the most relevant outside data sets to evaluate the quality of all GHGRP data.

In addition to identifying data sets for the 12 new subparts, the contractor shall prepare a strategy and schedule to effectively use relevant outside data sets to evaluate GHGRP data. This strategy should present an approach to identify data sets which include data that could be used for verification, as well as an approach to create a system that efficiently and effectively compares GHGRP to relevant data sets. Depending on the system that is proposed for comparing data, this system could be implemented under this contract and/or implemented by the SMEs. The contractor shall implement the strategy approved by the TOPO.

Under this task, the contractor shall follow an iterative strategy of identifying and evaluating relevant external data sets for a specific subpart, incorporating these data sets into a centralized data warehouse, and mapping GHGRP data to the data contained in the data warehouse. This task will entail the following steps:

- Identify external data sets and contact the respective data stewards to procure the data,
- Storing raw data,
- Record meta data
- Finalize an agreement to include the data set in a centralized Oracle database,
- Extract, transform and load external data into the Oracle database,
- Search for links between external data, GHGRP data, and other external data sources,
- Develop queries, techniques and tools to automate data processing and analysis.

EPA will provide further direction on which subparts to include under this task.

Deliverables and Schedule under Task 6.

Task 6.1	Draft list of outside data sets for 12 subparts	May 4, 2012
	Revised list of outside data sets for 12 subparts	May 25, 2012
Task 6.2	Draft strategy to use outside data sets for GHGRP verification	8 weeks after approval of task order
	Final strategy to use outside data sets for GHGRP verification	2 weeks after receiving EPA comments on draft strategy

Task 7: Develop Report Formats and Data Tracking Software

As needed, the contractor shall revise and update the existing VT output report templates. To this end, the contractor shall consider lessons learned from the first round of verification to develop a clear and easy-to-use format, as well as consider any unique design considerations associated with the 12 source categories that will begin reporting on September 28, 2012. The contractor shall ensure that updated versions of VT are programmed to generate results into the template formats.

The contractor shall update and maintain the existing verification tracking system (i.e., Sharepoint) or develop a new system that can be used to track the general status of annual GHG reports. The purpose of this tracking system is to provide easy-to-use tracking of the verification status of annual GHG reports, including total number of verification flags, number of open verification issues, number of closed verification issues, and the applicable deadline to resolve all verification issues. Ideally, this system will be set up to automatically retrieve relevant data from

existing systems, such as e-GGRT and VT, so that it provides timely updates and minimizes the potential for errors to occur in translating data. However, manually updating this tracking system is an acceptable option while an automated system is being developed, or if developing an automated system is not a feasible option. EPA will rely on this system to coordinate verification activities, provide routine updates to management, and track compliance.

Deliverables and schedule under Task 7.

Task 7.1	Revised VT output report templates for 3/30/12 reporting	April 6, 2012
	Revised VT and e-GGRT output report templates for 9/28/12 reporting	September 21, 2012
Task 7.2	Draft tracking system	March 16, 2012
Task 7.3	Final tracking system	April 13, 2012

Task 8: Develop Instructions for Staff Verification

As needed, the contractor shall update program-wide verification instructions for existing subparts and develop instructions for the 12 subparts added in RY2011. Verification instructions will be based on the format and organization that have already been developed. In the instructions, the contractor shall list and update the lists of outside data sets that were identified as a reference for each subpart. The contractor shall also describe the overall verification process for subpart leads, including the order of priority for reviewing reports, the procedures and dates for notifying reporters of potential errors, and the record keeping requirements that subpart leads will need to follow. The contractor shall develop the verification procedures with input and approval from the TOPO.

As needed, the contractor shall provide training on the verification process and associated instructions, either in person or via web-ex.

Deliverables and Schedule under Task 8.

Task 8.1	Update instructions for subparts reporting on March 30, 2012	March 26, 2012
	Finalize instructions for subparts reporting on March 30, 2012	April 6, 2012
Task 8.2	Drafts and update instructions for subparts reporting on September 28, 2012	July 31, 2012
	Finalize instructions for subparts reporting on September 28, 2012	September 14, 2012

Task 8.3	Training on verification instructions for reporting on March 30, 2012	March 2012
	Training on verification instructions for reporting on September 28, 2012	September 2012

Task 9: Quick Turn Around / General Verification Support

Under this task, the Contractor shall provide expert support to the TOPO and respond to requests related to verification and compliance tracking for presentation materials, meetings/workshops/training or other communication materials, conferences, technical briefings, or other analyses, often on a quick turn-around basis. The contractor shall also provide general verification support as directed by the TOPO, such as reviewing other verification protocols or other relevant documents, or developing outreach materials related to verification. This task has been provided in recognition of the significant amount of work associated with developing a verification process in a short time period and that unforeseen issues may arise.

Deliverables and Schedule under Task 9.

Task	Deliverable	Due Date
Task 9.1	No work should be undertaken or travel initiated under this Task until a technical directive TD has been issued by the TOPO.	Due dates will be determined in the TD.

IV. DELIVERABLE DISTRIBUTION

All deliverables shall be submitted to the TOPO at 1310 L Street, NW Washington, D.C. or submitted electronically. Deliverables shall be labeled with the contract number, task order number, and deliverable number. The Contractor shall provide the TOPO with at least one electronic copy of each deliverable.

V. PERIOD OF PERFORMANCE

The period of performance is from the effective date of the Task Order through September 30, 2013.

AMENDMENT OF SOLICITATION/MODIFICATION CONTRACT

1. CONTRACT ID CODE

PAGE OF PAGES

1

4

2. AMENDMENT/MODIFICATION NO.

001

3. EFFECTIVE DATE

03/12/2012

4. REQUISITION/PURCHASE REQ. NO.

See Schedule

5. PROJECT NO. (If applicable)

6. ISSUED BY

CODE

HPOD

7. ADMINISTERED BY (If other than Item 6)

CODE

HPOD

HPOD

US Environmental Protection Agency
Headquarters Procurement Operations
Ariel Rios Building
1200 Pennsylvania Avenue, NW
Washington DC 20460

HPOD

US Environmental Protection Agency
Headquarters Procurement Operations
Ariel Rios Building
1200 Pennsylvania Avenue, NW
Washington DC 20460

8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code)

(x)

9A. AMENDMENT OF SOLICITATION NO.

9B. DATED (SEE ITEM 11)

10A. MODIFICATION OF CONTRACT/ORDER NO.

EP-W-11-054

0001

10B. DATED (SEE ITEM 13)

03/08/2012

CODE (b)(4)

FACILITY CODE

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

☐ The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers ☐ is extended, ☐ is not extended.
Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods: (a) By completing Items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (If required)

Net Increase:

\$10,511.05

See Schedule

13. THIS ITEM ONLY APPLIES TO MODIFICATION OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

CHECK ONE

A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.

X

B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).

C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:

D. OTHER (Specify type of modification and authority)

E. IMPORTANT: Contractor ☒ is not, ☐ is required to sign this document and return 0 copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)

DUNS Number: (b)(4)

TOPO: SEAN HOGAN

The purpose of this modification is to correct an error in the maximum task order amount. The subject task order was erroneously awarded with a maximum task order amount of \$299,662.45. The correct maximum task order amount is \$310,173.50. This modification increases maximum task order amount and adds funding in the amount of \$10,511.05 to account for the increased maximum. This task order is hereby fully funded in the amount of \$310,173.50.

LIST OF CHANGES:

Continued ...

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER (Type or print)

16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)

Christopher Jensen

15B. CONTRACTOR/OFFEROR

15C. DATE SIGNED

16B. UNITED STATES OF AMERICA

16C. DATE SIGNED

(Signature of person authorized to sign)

(Signature of Contracting Officer)

NSN 7540-01-152-8070

Previous edition unusable

STANDARD FORM 30 (REV. 10-83)
Prescribed by GSA
FAR (48 CFR) 53.243

CONTINUATION SHEET

REFERENCE NO. OF ~~MENT~~ BEING CONTINUED
EP-W-11-054/0001/001

PAGE 2 OF 4

NAME OF OFFEROR OR CONTRACTOR
RESEARCH TRIANGLE INSTITUTE

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	<p>Reason for Modification : Other Administrative Action</p> <p>Total Amount for this Modification: \$10,511.05</p> <p>New Total Amount for this Version: \$310,173.50</p> <p>New Total Amount for this Award: \$310,173.50</p> <p>Obligated Amount for this Modification: \$10,511.05</p> <p>New Total Obligated Amount for this Award: \$310,173.50</p> <p>CHANGES FOR LINE ITEM NUMBER: 1</p> <p>Total Amount changed from \$299,662.45 to \$310,173.50</p> <p>Obligated Amount for this modification: \$10,511.05</p> <p>CHANGES FOR DELIVERY LOCATION: OAR/OAP/CCD</p> <p>Amount changed from \$299,662.45 to \$310,173.50</p> <p>CHANGES FOR ACCOUNTING CODE:</p> <p>12-13-B-58F7-101A46XQ3-2505-1258FC2547-001</p> <p>Percent changed from 100 to 96.61124</p> <p>NEW ACCOUNTING CODE ADDED:</p> <p>Account code:</p> <p>11-12-B-58F7-105A46CQ3-2505-1158FC1437-001</p> <p>Beginning FiscalYear 11</p> <p>Ending Fiscal Year 12</p> <p>Fund (Appropriation) B</p> <p>Budget Organization 58F7</p> <p>Quantity: 0</p> <p>Amount: \$6,174.21</p> <p>Percent: 1.99057</p> <p>Subject To Funding: N</p> <p>Payment Address:</p> <p>RTP Finance Center</p> <p>US Environmental Protection Agency</p> <p>RTP-Finance Center (D143-02)</p> <p>109 TW Alexander Drive</p> <p>Durham NC 27711</p> <p>NEW ACCOUNTING CODE ADDED:</p> <p>Account code:</p> <p>11-12-B-58F7-105A46CQ3-2505-1158FC1439-001</p> <p>Beginning FiscalYear 11</p> <p>Ending Fiscal Year 12</p> <p>Fund (Appropriation) B</p> <p>Budget Organization 58F7</p> <p>Quantity: 0</p> <p>Amount: \$455.90</p> <p>Percent: .14698</p> <p>Continued ...</p>				

CONTINUATION SHEET

REFERENCE NO. OF ~~MENT~~ BEING CONTINUED
EP-W-11-054/0001/001PAGE OF
3 4NAME OF OFFEROR OR CONTRACTOR
RESEARCH TRIANGLE INSTITUTE

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	<p>Subject To Funding: N Payment Address: RTP Finance Center US Environmental Protection Agency RTP-Finance Center (D143-02) 109 TW Alexander Drive Durham NC 27711</p> <p>NEW ACCOUNTING CODE ADDED: Account code: 11-12-B-58F7-105A46CQ3-2505-1158FC1452-001 Beginning FiscalYear 11 Ending Fiscal Year 12 Fund (Appropriation) B Budget Organization 58F7 Quantity: 0 Amount: \$1,016.00 Percent: .32756 Subject To Funding: N Payment Address: RTP Finance Center US Environmental Protection Agency RTP-Finance Center (D143-02) 109 TW Alexander Drive Durham NC 27711</p> <p>NEW ACCOUNTING CODE ADDED: Account code: 11-12-B-58F7-105A46CQ3-2505-1158FC1451-001 Beginning FiscalYear 11 Ending Fiscal Year 12 Fund (Appropriation) B Budget Organization 58F7 Quantity: 0 Amount: \$2,864.94 Percent: .92366 Subject To Funding: N Payment Address: RTP Finance Center US Environmental Protection Agency RTP-Finance Center (D143-02) 109 TW Alexander Drive Durham NC 27711</p> <p>Delivery Location Code: OAR/OAP/CCD OAR/OAP/CCD US Environmental Protection Agency Continued ...</p>				

CONTINUATION SHEET

REFERENCE NO. OF ☐ **MENT BEING CONTINUED**
 EP-W-11-054/0001/001

PAGE OF
 4 4

NAME OF OFFEROR OR CONTRACTOR
 RESEARCH TRIANGLE INSTITUTE

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	1200 Pennsylvania Avenue NW Mail Code: 62107J OAP/CCD Washington DC 20460 USA Period of Performance: 03/12/2012 to 03/11/2013				

ORDE R SUPPLIES OR SERVICES

PAGE OF PAGES

1

2

IMPORTANT: Mark all packages and papers with contract and/or order numbers.

1. DATE OF ORDER 03/08/2012		2. CONTRACT NO. (If any) EP-W-11-054		6. SHIP TO: a. NAME OF CONSIGNEE OAR/OAP/CCD			
3. ORDER NO. 0001		4. REQUISITION/REFERENCE NO. PR-OAR-12-00980					
5. ISSUING OFFICE (Address correspondence to) HPOD US Environmental Protection Agency Headquarters Procurement Operations Ariel Rios Building 1200 Pennsylvania Avenue, NW Washington DC 20460				b. STREET ADDRESS US Environmental Protection Agency 1200 Pennsylvania Avenue NW Mail Code: 62107J OAP/CCD		d. STATE DC	
				c. CITY Washington		e. ZIP CODE 20460	
7. TO: a. NAME OF CONTRACTOR RESEARCH TRIANGLE INSTITUTE				f. SHIP VIA			
b. COMPANY NAME				8. TYPE OF ORDER			
c. STREET ADDRESS PO BOX 12194				<input type="checkbox"/> a. PURCHASE REFERENCE YOUR:		<input checked="" type="checkbox"/> b. DELIVERY Except for billing instructions on the reverse, this delivery order is subject to instructions contained on this side only of this form and is issued subject to the terms and conditions of the above-numbered contract.	
				Please furnish the following on the terms and conditions specified on both sides of this order and on the attached sheet, if any, including delivery as indicated.			
d. CITY RESEARCH TRIANGLE PARK		e. STATE NC		f. ZIP CODE 277092194			
9. ACCOUNTING AND APPROPRIATION DATA See Schedule				10. REQUISITIONING OFFICE OAR/OAP/CCD			
11. BUSINESS CLASSIFICATION (Check appropriate box(es))						12. F.O.B. POINT Destination	
<input type="checkbox"/> a. SMALL <input checked="" type="checkbox"/> b. OTHER THAN SMALL <input type="checkbox"/> c. DISADVANTAGED <input type="checkbox"/> d. WOMEN-OWNED <input type="checkbox"/> e. HUBZone <input type="checkbox"/> f. SERVICE-DISABLED VETERAN-OWNED <input type="checkbox"/> g. WOMEN-OWNED SMALL BUSINESS (WOSB) ELIGIBLE UNDER THE WOMEN-OWNED SMALL BUSINESS PROGRAM <input type="checkbox"/> h. ECONOMICALLY DISADVANTAGED WOMEN-OWNED SMALL BUSINESS (EDWOSB)							
13. PLACE OF		14. GOVERNMENT B/L NO.		15. DELIVER TO F.O.B. POINT ON OR BEFORE (Date)		16. DISCOUNT TERMS	
a. INSPECTION Destination		b. ACCEPTANCE Destination					
17. SCHEDULE (See reverse for Rejections)							
ITEM NO. (a)	SUPPLIES OR SERVICES (b)	QUANTITY ORDERED (c)	UNIT (d)	UNIT PRICE (e)	AMOUNT (f)	QUANTITY ACCEPTED (g)	
	DUNS Number: (b)(4) TOPO: SEAN HOGAN Continued ...						
18. SHIPPING POINT		19. GROSS SHIPPING WEIGHT		20. INVOICE NO.		17(h) TOTAL (Cont. ages)	
21. MAIL INVOICE TO:							
a. NAME		RTP Finance Center		\$299,662.45			
b. STREET ADDRESS (or P.O. Box)		US Environmental Protection Agency RTP-Finance Center (D143-02) 109 TW Alexander Drive				17(i) GRAND TOTAL	
c. CITY		Durham		e. STATE NC		f. ZIP CODE 27711	
22. UNITED STATES OF AMERICA BY (Signature)				23. NAME (Typed) Christopher Jenson TITLE: CONTRACTING/ORDERING OFFICER			

ORDER FOR SUPPLIES OR SERVICES
SCHEDULE - CONTINUATION

PAGE NO

2

IMPORTANT: Mark all packages and papers with contract and/or order numbers.

DATE OF ORDER
03/08/2012

CONTRACT NO.
EP-W-11-054

ORDER NO.
0001

ITEM NO. (a)	SUPPLIES/SERVICES (b)	QUANTITY ORDERED (c)	UNIT (d)	UNIT PRICE (e)	AMOUNT (f)	QUANTITY ACCEPTED (g)
0001	Admin Office: HPOD US Environmental Protection Agency Headquarters Procurement Operations Ariel Rios Building 1200 Pennsylvania Avenue, NW Washington DC 20460 Accounting Info: 12-13-B-58F7-101A46XQ3-2505-1258FC2547-001 BFY: 12 EFY: 13 Fund: B Budget Org: 58F7 Program (PRC): 101A46XQ3 Budget (BOC): 2505 DCN - Line ID: 1258FC2547-001 Period of Performance: 03/12/2012 to 03/11/2013 Support for Development of Verification Process for GHGRP (Solicitation PR-12-OAR-00603)				299,662.45	

TOTAL CARRIED FORWARD TO 1ST PAGE (ITEM 17(H))

\$299,662.45

AUTHORIZED FOR LOCAL REPRODUCTION
 PREVIOUS EDITION NOT USABLE

OPTIONAL FORM 348 (Rev. 4/2006)
 Prescribed by GSA FAR (48 CFR) 53.213(f)

STATEMENT OF WORK

Title: Support for Development of Verification Process for Greenhouse Gas Reporting Program

Task Order Project Officer (TOPO):

Sean Hogan
US Environmental Protection Agency
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Fax: (202) 343-2210
E-mail: Grogan-McCulloch.Lisa@epa.gov

Contracting Officer (CO):

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Fax: (202) 565-2554
Email: jenson.christopher@epa.gov

I. BACKGROUND

In September 2009, EPA finalized the regulatory action that launched the EPA's Greenhouse Gas Reporting Program (GHGRP). Covered facilities will report 2011 GHG data to EPA on either March 31, 2012 or September 28, 2012, by using a web platform developed by EPA called the electronic GHG Reporting Tool ("e-GGRT") or by submitting a bulk XML file. The GHGRP is an annual reporting program, with report submissions due in subsequent years on March 31 of each year.

GHG data reported under the GHGRP will be verified by EPA. Prior to EPA verification, reporters are required to self-certify that the data they submit to EPA is truthful, accurate and complete. EPA reviews the GHG data, including emissions data from direct emitters and supporting data submitted from reporters, and verifies that they are complete, accurate, and meet the reporting requirements of this rule. EPA data verification ensures accuracy and completeness, such that EPA and the public are confident in using the data for developing climate policies and potential future regulations. Data that are not entitled to confidential

treatment will be published on EPA's website for public analysis.

In implementing verification of GHGRP data, EPA has developed a three step process, described below.

1. **Automated Review of Data.** First, EPA conducts an initial centralized review of the data which is largely automated. The automated review consists of two components. The first component is built in e-GGRT and is designed to provide reporters with real-time feedback before they officially submit their data. The second component is built in stand-alone software, referred to as the Verification Tool (VT), which pulls post-submittal data from e-GGRT and run pre-programmed tests to more closely assess the completeness and accuracy of the data. Both e-GGRT and VT generate output reports to summarize the verification findings and to flag possible errors and inaccuracies for follow-up.
2. **Staff Review of Data.** Second, subpart leads review the output reports, following program-wide instructions on verification priorities and procedures, and notify reporters of any potential errors, discrepancies, or questions. The purpose of this step is for reporters to resubmit their annual reports with corrected data or for the subpart leads to otherwise resolve the flags through analysis and communication with the reporters.
3. **On-Site Visits.** Third, EPA will maintain the option to conduct on-site visits of selected facilities and suppliers, in the event centralized verification identifies issues which warrant site visits to resolve. The purpose of site visits would be to further evaluate reported data based on records that are kept at the facility but not submitted (e.g., GHG monitoring plans), as well as field methods to measure and QA/QC data. To date, EPA has not encountered a situation where an on-site visit is required and it is considered to be unlikely in the future.

To date, EPA has developed and implemented this verification process, with exception for the on-site visits. The scope of this effort has included developing and coding the specifications for all of the checks that the VT used for 28 subparts, including range checks, algorithm logic checks, statistical tests, and substitute data checks. This also included developing the Oracle tables that were used to transfer GHG data and VT output reports between e-GGRT and the VT. Furthermore, this included developing the format and organization of the program-wide verification instructions and extensively researching the availability of outside data sources which could be used to evaluate data quality. In September 2011, the GHGRP received data for Reporting Year 2010 (RY2010), which was the first year that data was collected and successfully verified by the Program.

As further described in this SOW, future work will entail making updates to the VT and verification process before the GHGRP receives the next round of data in March and September 2012, running the VT and performing other verification procedures in 2012 and future years, and making ongoing improvements to the VT and verification process. With respect to ongoing

improvements, EPA is continually striving to more effectively integrate the GHGRP data collection system (e-GGRT) and the verification process. Therefore, while this SOW presents an approach for performing verification, EPA remains open to consider other tools and/or processes that meet the same objectives and schedule.

II. SCOPE

The work outlined under this requirement is consistent with Section 1.2.5 of the Contract Statement of Work.

III. TASKS AND DELIVERABLES

Task 1: Project Management

The Contractor shall provide project management under this task, and shall submit a Monthly Status Report to EPA's TOPO and Contracting Officer (CO) in accordance with the Project Reporting section below. During the Period of Performance (POP), the Contractor shall immediately inform the TOPO and CO by telephone and/or email of any problems that may impede performance along with any corrective action needed by the EPA or the Contractor to solve the problem.

Under this task, the Contractor shall also attend a kick-off meeting, either via conference call or in person, whichever is most cost-effective to the U.S. Government, to discuss the goals and strategy for completing the deliverables. This kick-off meeting will serve as a brainstorming session to clarify the tasks, provide any necessary background material, solicit ideas and feedback from the Contractor, as well as formulate ideas for work to be completed by the Contractor under the Tasks listed below. The contractor shall develop a project timeline based on the statement of work and direction from the TOPO that incorporates the deliverable dates for all tasks. The Contractor, under this task, shall also attend a wrap-up meeting at the end of the POP to discuss work completed under the Tasks.

Deliverables and schedule under Task 1:

Task 1.1	Attend kick-off meeting	Within 1 week of approval of Task Order
Task 1.2	Project Timeline	Within 2 weeks of approval of Task Order
Task 1.3	Monthly Status Report	By 10 th business day each month
Task 1.4	Attend End of POP meeting	At least 2 weeks prior to end of POP, per TOPO direction

Task 2: Critical Review of Existing Verification Process (as it pertains to developing verification checks)

EPA successfully verified the first round of data collected through the GHGRP and, in the process, gained a lot of valuable experience which will need to be captured and used to further develop and refine the verification process. To this end, the purpose of this task is for the contractor to develop a thorough understanding of the existing verification process and the

lessons learned during the first round of verification so that opportunities for improvement are identified and addressed, where feasible.

To this end, the contractor shall perform a critical review of the existing GHGRP verification process. The objectives of this review are for the contractor to:

- establish a thorough understanding of the existing verification process and the systems used for verification, correspondence, tracking and reporting;
- identify opportunities to improve the existing process and develop recommendations for both near-term and long-term improvements; and
- develop a strategy to implement improvements while meeting the objectives and schedule described in this SOW.

The outcome of this effort will be a list of recommendations to improve the existing verification process and a proposal for implementing these recommendations. In the event EPA supports one or more of the recommendations, the recommendations will be implemented according to a process and schedule agreed upon by the TOPO.

Deliverables and schedule under Task 2:

Task 2.1	Meet with EPA verification team	Within 2 weeks of approval of Task Order
Task 2.2	Summary of recommendations and proposals to improve the existing verification process and/or systems	Within 4 weeks of approval of Task Order

Task 4: Develop Statistical Tests for Each Subpart

The contractor shall develop subpart-specific statistical checks for verification purposes. To date, statistical checks have not had a significant role in the GHGRP verification process given limitations on the data the Program collects, and there is only one year of data. However, looking ahead, EPA continues to be interested in developing statistical tests to evaluate GHGRP data.

The contractor shall determine what types of statistical analysis could be used to evaluate data collected by the GHGRP for the purpose of data verification. The contractor shall determine both the metrics to be used for verification from a technical standpoint as well as the specific statistical test that should be applied. For example, for many subparts it makes sense from a technical perspective to compare production data, where available, to emissions ratio of all facilities within a subpart, and then identify outliers as potential reporting errors. In this example, the contractor would identify the specific data reporting elements that would be used for the ratio as well as the statistical test that would be employed. EPA expects approximately 5-20 verification checks to be conducted on each subpart (perhaps more for subpart C), depending

on the complexity and number of reporters for each subpart. Below are some additional examples:

- Comparing site specific emission factors across facilities within a subpart to identify outliers; and
- If a subpart consists of facilities both with and without CEMS, comparing emissions from facilities without CEMS to emissions from facilities with CEMS.
- Comparing year-to-year emissions and other factors.

EPA expects that the contractor may recommend that some tests be run in parallel while others are run in series. For example, a test which yields outliers in emissions reported may be followed up by a test checking the inputs to the emission equation to isolate which variable caused the emissions to be an outlier.

In completing this task, the contractor shall investigate whether any statistical methods exist that could be applicable beyond the identification of outliers. The contractor shall also consider the use of data in other subparts to verify data in a given subpart. For example, perhaps data reported under subparts MM or P could be used for the purpose of verifying data reported under subpart Y. Lastly, the contractor shall consider whether data from other EPA (or non-EPA) reporting programs can be used to verify GGRP data.

The contractor shall prepare a strategy to develop and employee statistical checks in the GHGRP verification process. This strategy will present an approach and schedule to develop and implement statistical checks to verify data reported on March 30, 2012 and checks to verify data reported on September 28, 2012. This strategy will outline steps to develop statistical checks, incorporate statistical checks in the VT, and explain how verification issues identified by statistical checks will be used to evaluate data quality. The contractor shall also assess the relative strength of the statistical tests to help determine which statistical checks would be the most valuable for verification. The contractor shall implement the strategy approved by the TOPO.

Deliverables and Schedule under Task 4.

Task 4.1	Draft strategy to develop and implement statistical checks	8 weeks after approval of task order
	Final strategy to develop and implement statistical checks	2 weeks after receiving EPA comments on draft strategy

Task 5: Develop Algorithm Checks

The contractor shall develop algorithm checks to verify GHGRP data and/or refine existing algorithm checks. Similar to statistical analysis checks, the GHGRP has employed algorithm checks to a small extent to verify data. To date, these checks have been developed by the

respective EPA subject matter expert (SME) and their contractor to be incorporated in the VT. The purpose of this task is for the contractor to evaluate the algorithm checks used to date and develop a strategy to strengthen existing checks and/or create new checks which would be incorporated into the VT for future verification. The outcome of this effort would be feedback and guidance to the SMEs to assist them with developing and refining algorithm checks and/or development of algorithm checks for multiple subparts.

To this end, the contractor shall prepare a strategy and schedule to evaluate existing algorithm checks, as well as develop and/or refine and implement new or existing algorithm checks into VT. This strategy will present an approach and schedule to develop and implement algorithm checks to verify data reported on March 30, 2012 and checks to verify data reported on September 28, 2012. The contractor shall implement the strategy approved by the TOPO.

Deliverables and Schedule under Task 5.

Task 5.1	Draft strategy to develop and implement algorithm checks	8 weeks after approval of task order
	Final strategy to develop and implement algorithm checks	2 weeks after receiving EPA comments on draft strategy

Task 6: Identify Other Data Sets to Evaluate GHGRP Data

The contractor shall identify existing data sets (e.g., EIA, NEI, State inventories, etc.,) that can be used to evaluate the data received for the 12 subparts listed under Task 3. In addition, the contractor shall develop a strategy to use outside data sets to verify GHGRP data. To date, EPA has identified an extensive list of data sets that are similar to GHGRP data and, therefore, might be useful to evaluate data quality. The purpose of this task is for the contractor to identify data sets that could be used to evaluate data collected under the new subparts, as well as to develop a strategy to effectively use the most relevant outside data sets to evaluate the quality of all GHGRP data.

In addition to identifying data sets for the 12 new subparts, the contractor shall prepare a strategy and schedule to effectively use relevant outside data sets to evaluate GHGRP data. This strategy should present an approach to identify data sets which include data that could be used for verification, as well as an approach to create a system that efficiently and effectively compares GHGRP to relevant data sets. Depending on the system that is proposed for comparing data, this system could be implemented under this contract and/or implemented by the SMEs. The contractor shall implement the strategy approved by the TOPO.

Deliverables and Schedule under Task 6.

Task 6.1	Draft list of outside data sets for 12 subparts	May 4, 2012
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	Revised list of outside data sets for 12 subparts	May 25, 2012
Task 6.2	Draft strategy to use outside data sets for GHGRP verification	8 weeks after approval of task order
	Final strategy to use outside data sets for GHGRP verification	2 weeks after receiving EPA comments on draft strategy

Task 8: Develop Instructions for Staff Verification

As needed, the contractor shall update program-wide verification instructions for existing subparts and develop instructions for the 12 subparts added in RY2011. Verification instructions will be based on the format and organization that have already been developed. In the instructions, the contractor shall list and update the lists of outside data sets that were identified as a reference for each subpart. The contractor shall also describe the overall verification process for subpart leads, including the order of priority for reviewing reports, the procedures and dates for notifying reporters of potential errors, and the record keeping requirements that subpart leads will need to follow. The contractor shall develop the verification procedures with input and approval from the TOPO.

As needed, the contractor shall provide training on the verification process and associated instructions, either in person or via web-ex.

Deliverables and Schedule under Task 8.

Task 8.1	Update instructions for subparts reporting on March 30, 2012	March 26, 2012
	Finalize instructions for subparts reporting on March 30, 2012	April 6, 2012
Task 8.2	Drafts and update instructions for subparts reporting on September 28, 2012	July 31, 2012
	Finalize instructions for subparts reporting on September 28, 2012	September 14, 2012
Task 8.3	Training on verification instructions for reporting on March 30, 2012	March 2012
	Training on verification instructions for reporting on September 28, 2012	September 2012

Task 9: Quick Turn Around / General Verification Support

Under this task, the Contractor shall provide expert support to the TOPO and respond to requests related to verification and compliance tracking for presentation materials, meetings/workshops/training or other communication materials, conferences, technical briefings, or other analyses, often on a quick turn-around basis. The contractor shall also provide general verification support as directed by the TOPO, such as reviewing other verification protocols or other relevant documents, or developing outreach materials related to verification. This task has been provided in recognition of the significant amount of work associated with developing a verification process in a short time period and that unforeseen issues may arise.

Deliverables and Schedule under Task 9.

Task 9.1	No work should be undertaken or travel initiated under this Task until a technical directive TD has been issued by the TOPO.	Due dates will be determined in the TD.

IV. DELIVERABLE DISTRIBUTION

All deliverables shall be submitted to the TOPO at 1310 L Street, NW Washington, D.C. or submitted electronically. Deliverables shall be labeled with the contract number, task order number, and deliverable number. The Contractor shall provide the TOPO with at least one electronic copy of each deliverable.